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Art Unit	3725
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To Whom It May Concern:

Please view the CD on the cutter to help better understand the working mechanics of the cutter. Multiple linkages enable this cutter to harvest trees on the steep slopes leaving low stumps along with non-pinching of the saw bar during multiple cuts.

Thank you,

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As you can see on US patent Aug 4 1981 sheet 1 of 3 4,281,693 it shows the tipping of tower versus the base of the machine whether the tower is tipped ahead or back the base cannot follow the contour of the ground while maintaining the alignment of the tower with the tree and still be able to obtain the total capacity of the cutter. Either a forward or backward motion with this type of hinge point greatly reduces the diameter capacity of the cutter. It is impossible to maintain the consistency of the tower versus the base versus the tree versus the ground contour with this type of linkage. I have overcome this situation on as steep as a 1 ½ to 1 slope regardless of the host carrier's position while cutting contour stumps. I do not see clamps on this tower, it is only a pusher. The saw base is mounted on the opposite side cutting away from host tractor rather than toward the tractor or tower assembly.

On US patent 3,941,174 all linkage on this cutter belongs to the host tractor. It appears as though the tower and the base of the cutter are one piece thus making for high stumps on slopes. Through a series of multiple hinge points on the cutter in application no. 10/526,094 it allows the host tractor to follow the ground contour while maintaining the minimal stump height on steep slopes and also gives operator the ability to remove stems from slopes for safer skidding.

Explanation of pin assembly on application no. 10/526,094:
Implement plate 6 will be known as "IP". The "IP" is the implement side of the quick-attach system which connects the tool to the tractor. The base 5 of the cutter pivots on 6 "IP" on pin point 1. The base 5 is self-aligning with the contour of the ground.

Base 5 pivots on pin 1 thus allowing the saw bar to follow the contour of the ground making for ground contour stumps or should the operator choose to cut flat stumps this is his or her option. As base 5 pivots on pin 1 to follow the ground contour, the pivot point 2 throws the base of the tower forward or backward depending whether cutting up or down the slope: backward for an up slope, forward for a down slope. At this point tower 4 pivots on point 10, point 3, and point 4 to maintain concentricity between the face of tower 7 and the back of radius on base 8. This allows the cutter to cut full diameter trees on any slope.

All clamp assemblies are componentized and bolted on as an assembly and are interchangeable from side to side, top to bottom for easy repair or exchange.

The tower 14 aligns with tree stem and clamps 11 to stem.

Tower cylinder 12 retracts to pre-charge the tower.
Explanation of pre-charging: pull tower and tree toward 6 "IP" prior to cutting.

Saw bar assembly 13 is positioned on the right rear of the base.

The saw bar travels from the front of base 5 to the rear radius 8 to sever the tree from the stump.

The distance between the pivot point 10 and the front of tower 7 creates a lifting effect of multiples to one lift versus tip.

When the tower cylinders 12 are retracted for pre-charging prior to cutting, slight retracting of cylinders 12 through pivot points 3, 4, and 10 allow for multiple stem bar free cuts.

Base 5 with the bar assembly remains motionless on the ground while the tower 14 can move the tree up and back to widen the gap between the tree saw and the stump.